The specification and abstract have been amended to correct minor typographical errors. No new subject matter has been added.

In view of the above amendments and remarks, Applicant respectfully requests reconsideration of amended claims 1 – 6, and the issuance of a Notice of Allowance in respect to claims 1-6, 10-16.

The Commissioner is hereby authorized to charge any fee which should have been filed herewith to our Deposit Account No. 50-0337, under Order No. LA-6871-123.US. A duplicate copy of this paper is enclosed. Please show our above-referenced docket number with any credit or charge to the deposit account.

Attached hereto is a marked-up version of the changes made to the specification and claims by the instant response. The attached page is captioned "**Version with markings to show changes made.**"

Dated: February 13, 2003

Respectfully submitted,

By _____
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VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE SPECIFICATION:

Paragraph beginning at page 2, line 5, has been amended as follows:

- -The invention comprises a method, process and system for synthesizing an optimized process flow, an activity abstraction hierarchy and an instruction set that represents the minimal work to produce at least one outcome. An embodiment of this invention utilized a single set of non-redundant activities and activity dependencies, which has already been derived from an organization's current processes and procedures to produce an optimized work flow with respect to the desired outcomes for a project. To accomplish this, the conditional execution requirements of each activity required to produce a specified outcome are recursively examined to identify the set of activities which must be completed to arrive at the outcome. Starting with the last of these activities, a determination is made as to whether the activity is already present in the subject project work plan. If the activity is not present, but should be, it is inserted into its correct position in the project's work breakdown structure and is linked into the work flow for each predecessor and successor activity already present in the project's work breakdown structure. Working upstream [backward] along the process chain from that identified last activity, the process of activity insertion/positioning and work flow linking continues until all activities in the process chain of the outcome have been considered for insertion. Higher level summary activities are also introduced into the project's work breakdown structure as the lowest-level activities are inserted by referencing a designated work breakdown structure template.- -

The sub-heading on Page 4 has been amended as follows:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Paragraph 31 on page 5, has been amended as follows:

- -A process and system is disclosed to assist work planners by assembling a work breakdown structure (WBS) and work flow for a project based on the explicit selection or deselection of outcome(s) by [outcome(s)by] a work planner from a defined set of possible outcomes. The process and system ensure that the resulting project WBS and work flow is composed of the minimum set of activities required to produce the set of outcomes desired for the project.- -

Paragraph 55 on page 8, has been amended as follows:

- -This workflow development process is designed for use on large-scale projects, including analysis of business strategies, such as where to go with new product development, or reorganization [development, organization] of a large-scale enterprise (e.g. large corporation). Therefore, the results of the workflow development process must be without

error and must be capable of handling inputs from disparate sources, e.g., in a corporation, from a research and development unit or division, a manufacturing unit or division, a human resources unit or units, an upper management oversight unit and a reorganization plan (simultaneously with a reorganization of the corporation for carrying out the major project). The workflow development must be done in a manner such that the risk to the enterprise utilizing the work flow development process must be minimized, as well as to the risk to a consulting company providing guidance with its work flow development process. For example, a work plan development process, if it were applied to the development of the B-2 Bomber, would have entailed the reorganization of a corporation to have a whole new large division, staffing such a division, having ongoing research and development input, designing the aircraft with thousands and thousands of specifications and requirements, a manufacturing unit, again with thousands of documented procedures, test units with thousands of tests and test documentation, acceptance tests procedures and manuals for the Air Force. These are extremely complex processes and the costs may be 100's of billions of dollars.- -

Paragraph 136 on page 30, has been amended as follows:

- -Elementary activity EA C 1.3 produces the outcome that the user (work planner) wants to add to the project (i. e., Outcome O4), so it is selected from the Planning System Data Repository **28 [18]** (Figure 1).- -

IN THE CLAIMS:

Claims 7-9 have been canceled.

Claims 1-6 have been amended as follows:

1. (Amended) A process for generating a project work breakdown structure (WBS) and related work flows, comprising the steps of:

(a) selecting an existing project WBS, said existing project WBS having related work flows;

(b) selecting at least one desired outcome for synthesis, said at least one selected desired outcome having a first associated work flow comprising a network of interdependent activities; and

(c) synthesizing said first associated work flow with said existing project WBS and its related work flows by:

(c_1) identifying the most downstream activity in said first associated work flow;

(c_2) determining whether each activity in said first associated work flow is already present in the project WBS and related work flows being generated by starting with the most downstream activity in said first associated work flow and working upstream until all activities in said first associated work flow have been compared to the activities of the project WBS and related work flows being generated;

(c_3) adding any activity in said first associated work flow which is not already present in the project WBS and related work flows being generated;

(c_4) adding activity dependencies which should exist between any of said added activities and any activity already present in the project WBS and related work flows being generated; and

(c5) introducing summary activities, when required, into the project WBS being generated when lowest-level activities from said first associated work flow are added.

[A method for synthesizing an optimized process flow, an activity abstraction hierarchy and an instruction set that represents the minimal work to produces at least one outcome,

recursively examining conditional execution requirements of each activity associated with a specified outcome;

identifying activities which must be completed to arrive at an outcome;

identifying the last of said activities;

determining if an activity is present in a project work plan while working backward from the identified last activity;

adding said activity to said project work plan; if an identified activity is not present; and

introducing summary activities by referencing a designated work breakdown structure template, when required, when lowest-level activities are added to the work plan.]

2. (Amended) The process of claim 1, [A method for optimizing a work process flow, comprising a work breakdown structure and instruction for activities, the work process flow representing the minimal work to produce at least one outcome,] further comprising the steps of:

(d) selecting at least one undesired outcome for de-synthesis, said at least one selected undesired outcome having a second associated work flow comprising a network of interdependent activities; and

(e) de-synthesizing said second associated work flow from the project WBS and related work flows being generated by:

(e1) identifying the most downstream activity in said second associated work flow;

(e2) determining whether each activity in said second associated work flow is also part of the work flows associated with desired outcomes which are already present in the project WBS and related work flows being generated by starting with the most downstream activity in said second associated work flow and working upstream until all activities in said second associated work flow have been evaluated;

(e3) removing any activity and activity dependency which are not needed as part of the work flows associated with the remaining desired outcomes for the project WBS and related work flows being generated; and

(e4) removing summary activities, as appropriate, from the project WBS being generated as lowest-level activities from said second associated work flow are being removed.

[identifying activities necessary to arrive at the desired outcome;

identifying requirements for each activity;

identifying the last of the activities;

determining if an activity is present in the current work project plan by examining the process flow in a reverse direction from the last activity;

adding activities to the project work plan if an activity necessary to the outcome is not present;

eliminating an activity from the project work plan if an activity is unnecessary to the outcome; and

reexamining the requirements and activities to ensure that only necessary requirements and activities are present leading to the outcome in light of added or eliminated activities.]

3. (Amended) A process for generating a project work breakdown structure (WBS) and related work flows [optimizing a work process flow, comprising a work breakdown structure and instruction for activities, the work process flow] representing the minimal work to produce at least one desired outcome, said process comprising the steps of:

(a) viewing a set of available WBS templates;

(b) viewing a set of outcomes within and outside the scope of each WBS template from said set of available WBS templates;

(c) selecting a controlling WBS template from said set of available WBS templates for a project WBS;

(d) selecting at least one desired outcome from said set of outcomes for synthesis, said at least one selected desired outcome having a first associated work flow;

(e) synthesizing said first associated work flow with the project WBS according to said selected controlling WBS template;

(f) viewing the project WBS and related work flows being generated; and

(g) linking each activity of the project WBS being generated with appropriate instructional content.

[storing data and algorithms on a non-volatile storage device;

storing data and algorithms in volatile memory device;

running algorithms on a computer processor utilizing data and algorithms from non-volatile storage and from volatile memory devices;

assembling an optimized project work breakdown structure further comprising:

viewing available work breakdown structure templates;

selecting a work breakdown structure template as the controlling work breakdown structure;

selecting at least one outcome for synthesis;

synthesizing a new work breakdown structure by adding at least one outcome;

viewing the resulting work breakdown structure and work flow;

removing a selected outcome from a work breakdown structure;

synthesizing a new work breakdown structure by removing at least one outcome;

viewing the work breakdown structure after the removal of a specified outcome; and

linking each activity in the activity hierarchy represented by a specific work breakdown structure with a corresponding instruction module.]

4. (Amended) A system for generating a project work breakdown structure (WBS) and related work flows [optimizing a work process flow,] comprising:

(a) means for accepting as input an existing project WBS and at least one desired outcome, said existing project WBS having related work flows; [storing data and algorithms on a non-volatile storage device;]

(b) means for storing said existing project WBS and related work flows; [storing data and algorithms in volatile memory device;]

(c) means for storing a set of activities associated with a set of pre-defined WBS templates; [running algorithms on a computer processor utilizing data and algorithms from non-volatile storage and from volatile memory devices;]

(d) means for identifying lowest level activities and their interdependencies from said stored set of activities necessary to produce said at least one desired outcome, said identified lowest level activities and interdependencies defining an associated [storing an initial project work breakdown structure and] work flow; and

(e) means for synthesizing said associated work flow and appropriate summary activities with said existing project WBS and its related work flows [a storing a set of elementary activities

means for identifying elementary activities necessary to arrive at the desired outcome;

means for adding at least one outcome to said initial project work breakdown structure;

means for processing as input said initial project WBS and said outcome;

means for processing as output the elimination of any activity from the process flow if said activity is unnecessary to all chosen and present outcomes;]

means for processing as output the insertion of any activity into the process flow if said activity necessary to an outcome is not present; and

means for reexamining requirements and activities to ensure that only necessary requirements and activities are present leading to an outcome, in light of added or eliminated activities].

5. (Amended) The system [as in] of claim 4, further comprising[:] means for linking instructional content [an instruction text associated] with each activity.

6. (Amended) The system [as in] of claim 5, further comprising[:] means for viewing outcomes of a generated project WBS and related work flows [an existing specific project work plan].

New claims 10-16 have been added as follows:

- -10. The process of claim 3, further comprising the step of selecting at least one undesired outcome from said set of outcomes for de-synthesis after step (f), said at least one selected undesired outcome having a second associated work flow.

11. The process of claim 10, further comprising the step of de-synthesizing said second associated work flow from the project WBS and related work flows being generated by referencing said selected controlling WBS template.

12. A process for generating a project work breakdown structure (WBS) and related work flows, comprising the steps of:

(a) selecting a controlling WBS template for a project WBS;

(b) selecting at least one desired outcome for synthesis, said at least one selected desired outcome having a first associated work flow comprising a network of interdependent activities; and

(c) synthesizing said first associated work flow with the project WBS and related work flows being generated according to said selected controlling WBS template by:

(c_1) identifying the most downstream activity in said first associated work flow;

(c_2) determining whether each activity in said first associated work flow is already present in the project WBS and related work flows being generated by starting with the most downstream activity in said first associated work flow and working upstream until all activities in said first associated work flow have been compared to the activities of the project WBS and related work flows being generated;

(c_3) adding any activity in said first associated work flow which is not already present in the project WBS and related work flows being generated;

(c_4) adding any activity dependency which should exist between any of said added activities and any activity already present in the project WBS and related work flows being generated; and

(c_5) introducing summary activities, as appropriate, into the project WBS being generated when lowest-level activities from said first associated work flow are added.

13. The process of claim 12, further comprising the steps of:

(d) selecting at least one undesired outcome for de-synthesis, said at least one selected undesired outcome having a second associated work flow comprising a network of interdependent activities; and

(e) de-synthesizing said second associated work flow from the project WBS and related work flows being generated by:

(e_1) identifying the most downstream activity in said second associated work flow;

(e_2) determining whether each activity in said second associated work flow is also part of the work flows associated with desired outcomes which are already present in the project WBS and related work flows being generated by starting with the most downstream activity in said second associated work flow and working upstream until all activities in said second associated work flow have been evaluated;

(e_3) removing any activity and activity dependency which are not needed as part of the work flows associated with the remaining desired outcomes for the project WBS and related work flows being generated; and

(e_4) removing summary activities, as appropriate, from the project WBS being generated by referencing said selected controlling WBS template as lowest-level activities from said second associated work flow are being removed.

14. A system for generating a project work breakdown structure (WBS) and related work flows comprising:

(a) means for accepting as input a controlling WBS template for a project WBS and at least one desired outcome;

(b) means for storing said controlling WBS template;

(c) means for storing a set of activities associated with a set of pre-defined WBS templates;

(d) means for identifying lowest level activities and their interdependencies from said stored set of activities necessary to produce said at least one desired outcome, said identified lowest level activities and interdependencies defining an associated work flow; and

(e) means for synthesizing said associated work flow and appropriate summary activities with the project WBS and related work flows being generated according to said controlling WBS template.

15. The system of claim 14, further comprising means for linking instructional content with each activity.

16. The system of claim 15, further comprising means for viewing outcomes of a generated project WBS and related work flows.- -

IN THE ABSTRACT OF THE DISCLOSURE:

The Abstract of the Disclosure has been amended as follows:

- -A process and system is disclosed to assist work planners by assembling a work breakdown structure (WBS) and work flow for a project based on the explicit selection or deselection of outcome(s) by a work planner from a defined set of possible outcomes. The process and system ensure that the resulting project WBS and work flow is composed of the minimum set of activities required to produce the set of outcomes desired for the project. The process and system further ensure that the project's activities are organized into an activity hierarchy defined by a WBS template designated by the work planner, and that each of the project's activities is linked into an appropriate work flow, supported by appropriate instructional or descriptive content.- -